

What is claimed is:

1. A circuit protection device comprising
  - (1) a laminar PTC resistive element having first and second major surfaces and a thickness  $t$ ;
  - (2) a first electrode attached to the first surface of the PTC element;
  - (3) a second electrode attached to the second surface of the PTC element; and
  - (4) a first electrical lead comprising
    - (a) a first attachment portion having an attachment surface which is attached to the first electrode,
    - (b) a first connection portion which can be connected to an electrical circuit and is spaced away from the PTC element, and
    - (c) a first barrier portion which (i) is positioned on the first lead between the first attachment and first connection portions, (ii) extends toward the second electrode, and (iii) has a height  $x$ .
2. A device according to claim 1 which further comprises
  - (5) a second electrical lead comprising
    - (a) a second attachment portion having an attachment surface which is attached to the second electrode,
    - (b) a second connection portion which can be connected to an electrical circuit and is spaced away from the PTC element, and
    - (c) a second barrier portion which (i) is positioned on the second lead between the second attachment and second connection portions, (ii) extends toward the first electrode, and (iii) has a height  $y$ .

3. A device according to claim 1 wherein first barrier height  $x$  is at least as great as thickness  $t$ .
4. A device according to claim 2 wherein first barrier height  $x$  and second barrier height  $y$  are at least as great as  $0.5t$ .
5. A device according to claim 2 wherein the first and second leads comprise metal.
6. A device according to claim 2 wherein the first and second electrical leads are oriented axially.
7. A device according to claim 2 wherein the first and second leads are oriented at a  $90^\circ$  angle to one another.
8. A device according to claim 1 wherein the PTC element comprises a conductive polymer composition.
9. A device according to claim 1 wherein the first barrier portion comprises an indentation, notch, or bend in the first lead.
10. A device according to claim 1 wherein the first barrier portion comprises a raised cutout.
11. A device according to claim 1 wherein the first barrier portion comprises a wall.
12. A device according to claim 11 wherein the wall comprises a metallic or polymeric material.
13. A device according to claim 2 which further comprises an insulating layer which covers the first attachment portion, the second attachment portion, any section of the first electrode extending beyond the first attachment portion, and any section of the second electrode extending beyond the second attachment portion.
14. A device according to claim 13 wherein the insulating layer comprises a tape.
15. A device according to claim 2 which further comprises an insulating layer which covers the first and second attachment portions, the first and second barrier portions, any

section of the first electrode extending beyond the first attachment portion, and any section of the second electrode extending beyond the second attachment portion.

16. A device according to claim 15 wherein the insulating layer comprises a tape.
17. A circuit protection device comprising
  - (1) a laminar PTC resistive element having first and second major surfaces and a thickness  $t$ ;
  - (2) a first electrode attached to the first surface of the PTC element;
  - (3) a second electrode attached to the second surface of the PTC element;
  - (4) a first electrical lead comprising
    - (a) a first attachment portion having an attachment surface which is attached to the first electrode,
    - (b) a first connection portion which can be connected to an electrical circuit and is spaced away from the PTC element, and
    - (c) a first barrier portion which (i) is positioned on the first lead between the first attachment and first connection portions, and (ii) extends toward the second electrode; and
  - (5) a second electrical lead comprising
    - (a) a second attachment portion having an attachment surface which is attached to the second electrode,
    - (b) a second connection portion which can be connected to an electrical circuit and is spaced away from the PTC element, and
    - (c) a second barrier portion which (i) is positioned on the second lead between the second attachment and second connection portions, and (ii) extends toward the first electrode,

said first barrier portion being designed to block weld splatter between the first connection portion and the PTC element and said second barrier portion being designed to block weld splatter between the second connection portion and the PTC element.

18. A battery assembly comprising

(A) a circuit protection device comprising

- (1) a laminar PTC resistive element having first and second major surfaces and a thickness  $t$ ;
- (2) a first electrode attached to the first surface of the PTC element;
- (3) a second electrode attached to the second surface of the PTC element; and
- (4) a first electrical lead comprising
  - (a) a first attachment portion having an attachment surface which is attached to the first electrode,
  - (b) a first connection portion which can be connected to an electrical circuit and is spaced away from the PTC element, and
  - (c) a first barrier portion which (i) is positioned on the first lead between the first attachment and first connection portions, (ii) extends toward the second electrode, and (iii) has a height  $x$ , and

(B) a battery comprising a terminal, said terminal being welded to the first connection portion.